

CLAIMS

1. A video-encoding device for encoding video signals and
exerts control over the encoding according to an occupied
5 amount of a virtual buffer, the occupied amount being
determined based on the amount of codes generated through
the encoding and the amount of codes transferred to an
output destination, the video-encoding device comprising:

recording-mode determination means for determining
10 whether or not seamless connection between a preceding
chapter and the following chapter that are included in the
video signals is feasible and setting an initial value of
the occupied amount of the virtual buffer based on the
determination result;

15 occupied-amount update means for updating the occupied
amount of the virtual buffer every time the encoding is
performed;

optimum-occupied-amount calculation means for
calculating a predetermined optimum occupied amount based on
20 the updated occupied amount of the virtual buffer;

target-code-amount calculation means for calculating a
predetermined target-code amount based on the video signals
of the following chapter;

target-code-amount adjustment means for adjusting the
25 target code amount so that the sum total of the occupied

amount of the virtual buffer and the target code amount does not exceed the optimum occupied amount; and

encoding means for performing the encoding based on the adjusted target code amount.

5 2. The video-encoding device according to Claim 1, wherein the recording-mode determination means determines an occupied amount of the virtual buffer immediately before the video signals of the following chapter are transferred to the virtual buffer to be an initial value of the occupied
10 amount of the virtual buffer, where the seamless connection is feasible, and sets the initial value of the occupied amount of the virtual buffer to zero, where the seamless connection is infeasible.

3. The video-encoding device according to Claim 2,
15 wherein the occupied-amount update means determines a predetermined value that is obtained by subtracting the code-for-transfer amount from the occupied amount and adding the generated-code amount to the occupied amount and that is not larger than the maximum value of the virtual buffer to
20 be a new occupied amount, where the occupied amount is larger than the code-for-transfer amount, and determines the generated-code amount to be the new occupied amount, where the occupied amount is equivalent to the code-for-transfer amount or less.

25 4. The video-encoding device according to Claim 2,

wherein the optimum-occupied-amount calculation means calculates a predetermined value that is equivalent to and/or as large as the updated occupied amount of the virtual buffer, as the optimum occupied amount.

5 5. A video-encoding control device for exerting control over encoding based on an occupied amount of a virtual buffer, the occupied amount being determined based on the amount of codes generated at the time where video signals are encoded and the amount of codes transferred to an output
10 destination, the video-encoding control device comprising:

 recording-mode determination means for determining whether or not seamless connection between a preceding chapter and the following chapter that are included in the video signals is feasible and setting an initial value of
15 the occupied amount of the virtual buffer based on the determination result;

 occupied-amount update means for updating the occupied amount of the virtual buffer every time the encoding is performed;

20 optimum-occupied-amount calculation means for calculating a predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer;

 target-code-amount calculation means for calculating a predetermined target-code amount based on the video signals
25 of the following chapter; and

target-code-amount adjustment means for adjusting the target code amount so that the sum total of the occupied amount of the virtual buffer and the target code amount does not exceed the optimum occupied amount and using the
5 adjusted target code amount for the encoding.

6. The video-encoding control device according to Claim 5, wherein the recording-mode determination means determines an occupied amount of the virtual buffer immediately before the video signals of the following chapter are transferred to
10 the virtual buffer to be an initial value of the occupied amount of the virtual buffer, where the seamless connection is feasible, and sets the initial value of the occupied amount of the virtual buffer to zero, where the seamless connection is infeasible.

15 7. A video-encoding control method for exerting control over encoding based on an occupied amount of a virtual buffer, the occupied amount being determined based on the amount of codes generated at the time where video signals are encoded and the amount of codes transferred to an output
20 destination, the video-encoding control method comprising:

a step for determining whether or not seamless connection between a preceding chapter and the following chapter that are included in the video signals is feasible;
a step for setting an initial value of the occupied
25 amount of the virtual buffer based on the determination

result;

a step for updating the occupied amount of the virtual buffer every time the encoding is performed;

a step for calculating a predetermined optimum occupied
5 amount based on the updated occupied amount of the virtual buffer;

a step for calculating a predetermined target-code amount based on the video signals of the following chapter;
and

10 a step for adjusting the target code amount so that the sum total of the occupied amount of the virtual buffer and the target code amount does not exceed the optimum occupied amount and using the adjusted target code amount for the encoding.

15 8. A video-encoding control method for exerting control over encoding based on an occupied amount of a virtual buffer, the occupied amount being determined based on the amount of codes generated at the time where video signals are encoded and the amount of codes transferred to an output
20 destination, the video-encoding control method comprising:

a step for determining whether or not seamless connection between a preceding chapter and the following chapter that are included in the video signals is feasible;

a step for determining an occupied amount of the
25 virtual buffer immediately before the video signals of the

following chapter are transferred to the virtual buffer to
be an initial value of the occupied amount of the virtual
buffer, where it is determined that the seamless connection
is feasible based on the determination result, and setting
5 the initial value of the occupied amount of the virtual
buffer to zero, where it is determined that the seamless
connection is infeasible;

a step for updating the occupied amount of the virtual
buffer every time the encoding is performed;

10 a step for calculating a predetermined optimum occupied
amount based on the updated occupied amount of the virtual
buffer;

a step for calculating a predetermined target-code
amount based on the video signals of the following chapter;
15 and

a step for adjusting the target code amount so that the
sum total of the occupied amount of the virtual buffer and
the target code amount does not exceed the optimum occupied
amount and using the adjusted target code amount for the
20 encoding.

9. A program for exerting control over encoding based on
an occupied amount of a virtual buffer, the occupied amount
being determined based on the amount of codes generated at
the time where video signals are encoded and the amount of
25 codes transferred to an output destination, the program

being provided for making a computer execute:

a step for determining whether or not seamless connection between a preceding chapter and the following chapter that are included in the video signals is feasible;

5 a step for determining an initial value of the occupied amount of the virtual buffer based on the determination result;

a step for updating the occupied amount of the virtual buffer every time the encoding is performed;

10 a step for calculating a predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer;

a step for calculating a predetermined target-code amount based on the video signals of the following chapter;

15 and

a step for adjusting the target code amount so that the sum total of the occupied amount of the virtual buffer and the target code amount does not exceed the optimum occupied amount and using the adjusted target code amount for the
20 encoding.

10. A program for exerting control over encoding based on an occupied amount of a virtual buffer, the occupied amount being determined based on the amount of codes generated at the time where video signals are encoded and the amount of
25 codes transferred to an output destination, the program

being provided for making a computer execute:

a step for determining whether or not seamless connection between a preceding chapter and the following chapter that are included in the video signals is feasible;

5 a step for determining an occupied amount of the virtual buffer immediately before the video signals of the following chapter are transferred to the virtual buffer to be an initial value of the occupied amount of the virtual buffer, where it is determined that the seamless connection
10 is feasible based on the determination result, and setting the initial value of the occupied amount of the virtual buffer to zero, where it is determined that the seamless connection is infeasible;

a step for updating the occupied amount of the virtual
15 buffer every time the encoding is performed;

a step for calculating a predetermined optimum occupied amount based on the updated occupied amount of the virtual buffer;

a step for calculating a predetermined target-code
20 amount based on the video signals of the following chapter;
and

a step for adjusting the target code amount so that the sum total of the occupied amount of the virtual buffer and the target code amount does not exceed the optimum occupied
25 amount and using the adjusted target code amount for the

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encoding.